

Attachment E
IRA Work Plan: Freeland Festival Park

IRA Work Plan: Freeland Festival Park

Prepared for
The Dow Chemical Company

47 Building
Midland, Michigan 48667

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Acronyms and Abbreviations

Dow	The Dow Chemical Company
IRA	Interim Response Activity
MDCH	Michigan Department of Community Health
MDEQ	Michigan Department of Environmental Quality
MSU	Michigan State University
O&M	Operations and Maintenance
ppt	parts per trillion
RCRA	Resource Conservation and Recovery Act
RSGIS	Remote Sensing and Geographic Information Science
SOW	Statement of Work
TEQ	toxic equivalent
USDA	United States Department of Agriculture

IRA Work Plan: Freeland Festival Park

1. Introduction

On June 12, 2003, The Dow Chemical Company's (Dow) Midland Plant was issued a Resource Conservation and Recovery Act (RCRA) Operating License (the "License") by the Michigan Department of Environmental Quality (MDEQ). The License governs Dow's hazardous waste management activities at the Midland Plant, and also contains requirements for RCRA Corrective Action both onsite and offsite. The offsite provisions contained in Sections XI.B. and XI.G. of the License are the basis for this work plan. The work plan describes the Interim Response Activities (IRAs) that will be implemented in Freeland Festival Park.

Freeland Festival Park is located on the Tittabawassee River in Tittabawassee Township (Figure 1). The results of recent studies by MDEQ, *FINAL REPORT, Phase II Tittabawassee/Saginaw River, Dioxin Flood Plain Sampling Study, June 2003*, was the basis of MDEQ's recommendations for the elimination of potential exposure in public areas in the floodplain such as may exist at parks and boat launches. As a result of these preliminary data, Dow has worked with park officials to develop this work plan to address potential exposure of park visitors to soils and sediments.

2. Site Location and Description

Freeland Festival Park is located in Saginaw County (Figure 1). Table 1 summarizes some of the key features of Freeland Festival Park including size, facilities present, and several other characteristics. The following sections further describe the park.

TABLE 1
Summary of Park Features
The Dow Chemical Company

Park Name	Size (acres)	Playgrounds	Ball fields	Other Ball Courts	Boat Launches	Fishing dock	Hiking Trails	Wooded areas	Restroom facilities	Portable Toilet
Freeland Festival	12	N	N	N	N	Y	N	Y	N	Y

3. Physical Description

This section includes a physical description of the park emphasizing environmental and other features. Figure 2, associated with this description, is a recent aerial photo with overlays that identify park features such as playgrounds, ball fields, facilities, roads, boat launch areas, etc.

Freeland Festival Park is located on the northwest side of the Tittabawassee River near the intersection of Freeland Road and M-47 in Freeland, Michigan. The park is managed by Tittabawassee Township and is approximately 12 acres in size. It has approximately 980 feet of river frontage and is the central site for the annual Freeland Walleye Festival, an event that draws many visitors to the region.

Freeland Festival Park is equipped with a fishing dock, picnic pavilions, and a paved walkway. An unimproved foot trail extends from the northern extent of the open grass area along a ridge adjacent to the river. This ridge is approximately 15 feet above the riverbank. Another foot trail exists at the southeastern end of the park. This trail provides access to a sandy riverbank. With the exception of this southernmost area, the banks of the river at this park are relatively steep and heavily vegetated. Large willow trees overhang the banks.

The entire park lies within the estimated 100-year floodplain of the Tittabawassee River. The United States Department of Agriculture (USDA) Soil Conservation Service (USDA 1994) has identified soils within the park as Sloan silt loam. These soils are located on nearly level areas of alluvial planes, and are very poorly drained and are periodically flooded. The westernmost section of the park contains a large undeveloped forested area. This area immediately adjacent to the park contains a dense understory with raspberry, staghorn sumac, and goldenrod observed. No marked trails exist through the woodlands. A low-lying swale area extends through the woods to the south under West Freeland Road.

An examination of historical aerial photos collected from Michigan State University (MSU) Remote Sensing and Geographic Information Science (RSGIS) did not identify significant construction activities or other soil disturbances from 1937 to 1980. The following provides a description of the available photos.

- In 1937, the photo shows trees growing along the banks and a distinct roadway extending north to a clearing that appears to be a baseball diamond. Small structures exist north of the baseball diamond. The swale is also partially vegetated. Property to the north and west does not appear to be cultivated.
- In 1941, the road is still visible, however the baseball diamond is not. One of the structures may also have been removed in the intervening years. Vegetation is still present along the riverbanks and in the swale.
- By 1950 the road into the park is becoming less prominent, but the vegetation along the banks and in the swale is still present. In addition, the surrounding property appears to be used for farming.
- In an aerial photo taken in 1963, the vegetation along the banks and in the swale has clearly grown since the early photos. In addition, traces of a circular path are visible, as is more vegetation on the western portion of the property. Adjacent property appears to be used for agricultural purposes.

- A photo taken in 1970 shows the location of the present window blind shop along W. Freeland Road (west of the park) and a heavily vegetated park parcel.
- The photograph from 1980 shows a small entrance to the parcel, but the rest of the parcel appears vegetated.

Currently, land use west of the park is mostly agricultural and undeveloped with the exception of Tri-City Blinds, located west of the park at 10976 Freeland Road. A hunting blind was observed in the forest along the northwestern border of the property. Across the river, many businesses, restaurants, and homes overlook Freeland Festival Park. In particular, Carol's Carriage Hill Apartments, Riverside Restaurant, and Riverview Condominiums are prominent features along this stretch of the Tittabawassee River.

4. Recreational and Other Uses of Parks

This section describes the typical users of the park and the primary activities that occur. Because of its location, this park is available to people from nearby downtown Freeland who may use the park to lunch or fish along the banks of the river. According to township officials, Freeland Festival Park is operated from 7:30 AM to sunset. The only required park maintenance activity is lawn mowing.

5. Current Conditions in the Park

During the MDEQ study, soil samples were collected at four sample locations and are reported in MDEQ Phase II Report (MDEQ 2003). The dioxin and furan concentrations in parts per trillion (ppt) 2,3,7,8-TCDD toxic equivalent (TEQ) reported in the surface samples are shown on Figure 2.

6. Description of Completed Interim Response Activities (Hand Wash Stations)

Dow has consulted with park management to evaluate the number and location for the installations and use of portable hand washing stations in Freeland Festival Park as a means of reducing the potential for exposure to contaminated soils and sediments. Dow has contracted, procured and had a hand-washing station installed at the location suggested and approved by park officials.

6.1 Servicing of Hand Washing Stations:

Wash stations were contracted through Johnnie-On-The-Spot of Freeland and Saginaw. All hand-washing stations are being serviced by Johnnie-On-The-Spot once per week. The wash stations are filled with fresh water sourced from the City of Saginaw water supply and carted to the stations by Johnnie-On-The-Spot. Gray water is removed and discarded at the Saginaw County water treatment facility. Based on suggestions from park managers, the hand washing stations were removed from the parks in November and will be reinstalled in April.

6.2 Wash Station Signage

The signs at each wash station explaining the use of the station will be developed as described in Section 7.

7. Description of Planned Interim Response Activities

Following discussions with Tittabawassee Township officials responsible for Freeland Festival Park, the following additional IRAs were identified for implementation in the park to reduce potential exposure to soil and sediment.

- Signage: Signs advising the general public of the potential for exposure to dioxins and furans in soils and sediments will be posted within Freeland Festival Park. MDEQ, MDCH, and Tittabawassee Township will determine the content, design, and arrange for the installation of the proposed warning signs. Development and posting of signage will be completed in accordance with the work plan entitled: "Interim Response Activity: Communications."
- Access Restrictions: Installation of a stone wall along the riverbank to prevent access to the river except at selected locations (see Figure 2 for location of the wall). Figure 3 presents a conceptual model of the stone wall.
- Decking and Trails: The flat portion of the riverbank where a walking trail exists will be replaced with a two-tier deck that will allow boat and canoe access both during normal and high-water conditions and minimize contact with sediments along the riverbank (see Figure 4). The deck will be handicap accessible. A stone breakwall will be installed in the river at the upstream edge to minimize any damage to the structure from ice flows. Figure 3 presents a conceptual model of the trail and decking. A final design will be prepared for the stonewall, deck, and stone breakwall and submitted to MDEQ for review and approval.
- Vegetative Cover: The actively used areas around the picnic shelters will be evaluated for the placement of a vegetative cover. These areas are relatively flat with little slope and are not intensively used. The approximate extent of the area where supplemental vegetative cover will be considered is shown in Figure 2. Portions of these areas will require augmentation of the existing grassy cover to limit or eliminate the potential for direct contact with exposed soils. This area will be evaluated in the springtime when there is no snow cover to determine specific locations where amendments will be necessary. Following this evaluation, a final design document will be prepared and submitted to MDEQ for review and approval incorporating one or more of the following actions:
 - Interim Cover Materials – These actions will include the placement of topsoil and ground cover vegetation (such as grass) in specific locations identified following a site reconnaissance in the spring of 2004.
 - Interim Actions Designed to Meet Criteria – Depending on the results of the spring site reconnaissance survey, Dow may elect to install cover materials that are designed to meet criteria (in accordance with Part 201 guidance). The cover would consist of the following conceptual design:
 - A barrier layer (e.g., flagging) will be placed over the area to serve to alert individuals who may conduct intrusive activities in the park.

- 6 inches of clean topsoil will be placed on top of the barrier layer
- Grass or sod will be placed on top of the topsoil

An Operations and Maintenance (O&M) plan will be implemented to maintain these actions. The O&M plan will include regular inspections and maintenance activities required to maintain the barriers. Details of the barrier installation as well as the inspection and maintenance plan will be submitted as part of a final design package.

Park officials have agreed to have these items completed as soon as feasible. Dow will reimburse the township for the costs incurred as a result of implementing these IRAs.

A brief report summarizing these IRAs will be submitted to MDEQ once they are completed.

8. Schedule

The estimated schedule is presented in Attachment G of the Statement of Work (SOW) for the Tittabawassee River Sediments and Floodplain and includes the following activities:

- Site reconnaissance survey in the spring of 2004 to identify specific areas requiring vegetative cover materials
- Preparation and submittal of final design package
- MDEQ approval of final design
- Permitting with the US Army Corps of Engineers and MDEQ
- Construction
- Preparation and submittal of completion report
- O&M

Implementation of these IRAs will commence in the spring of 2004. The schedule is subject to change based on flooding or other conditions that may directly affect implementation of the planned IRAs.

9. References

Michigan Department of Environmental Quality. 2003. Phase II Tittabawassee/Saginaw River Dioxin Flood Plain Sampling Study, June 2003.

United States Department of Agriculture Soil Conservation Service. 1994. Soil Survey of Saginaw County, Michigan.

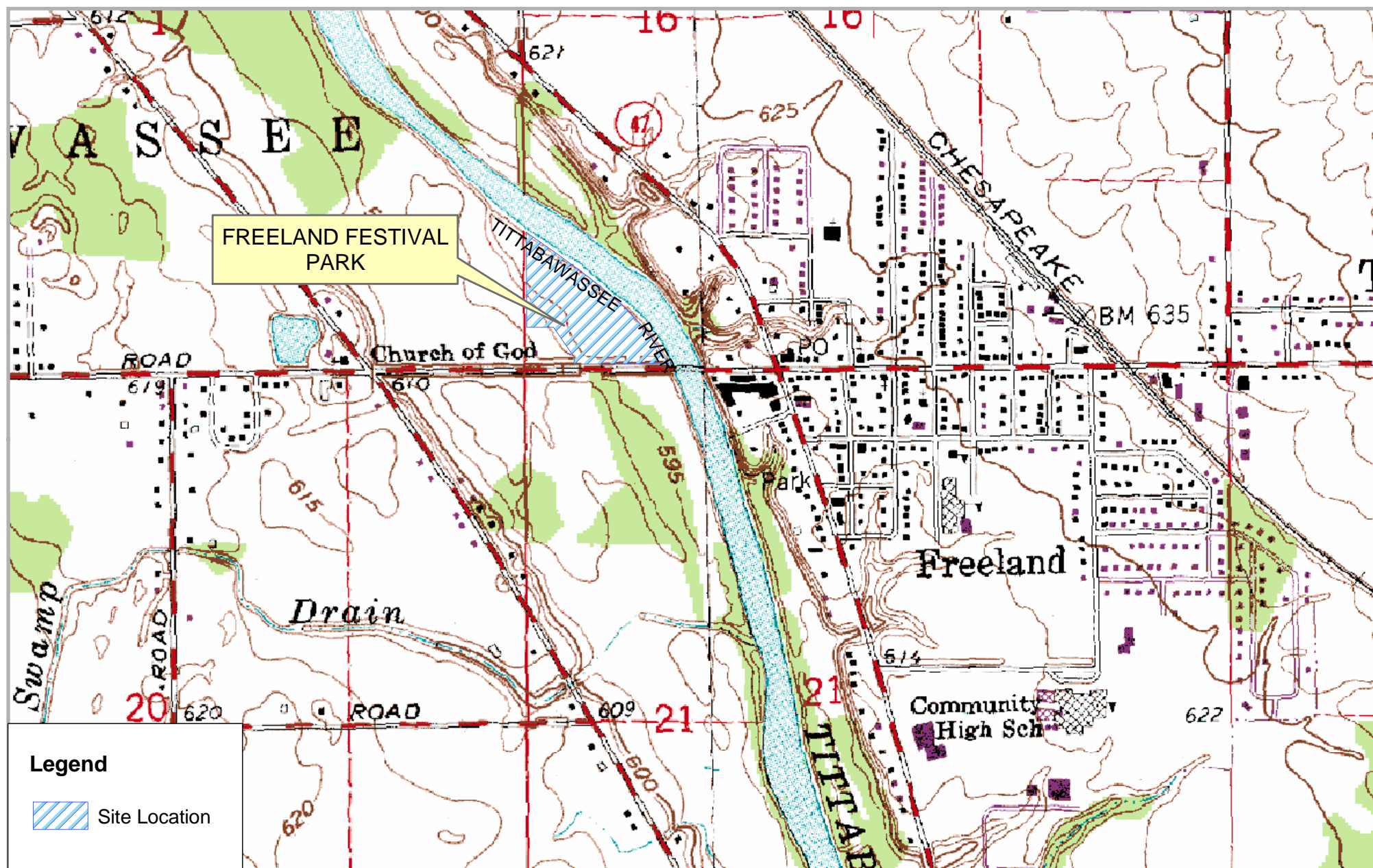


Figure 1
Location of Freeland Festival Park
 Interim Response Activities Workplan: Freeland Festival Park
 Dow Midland Offsite Corrective Action Program

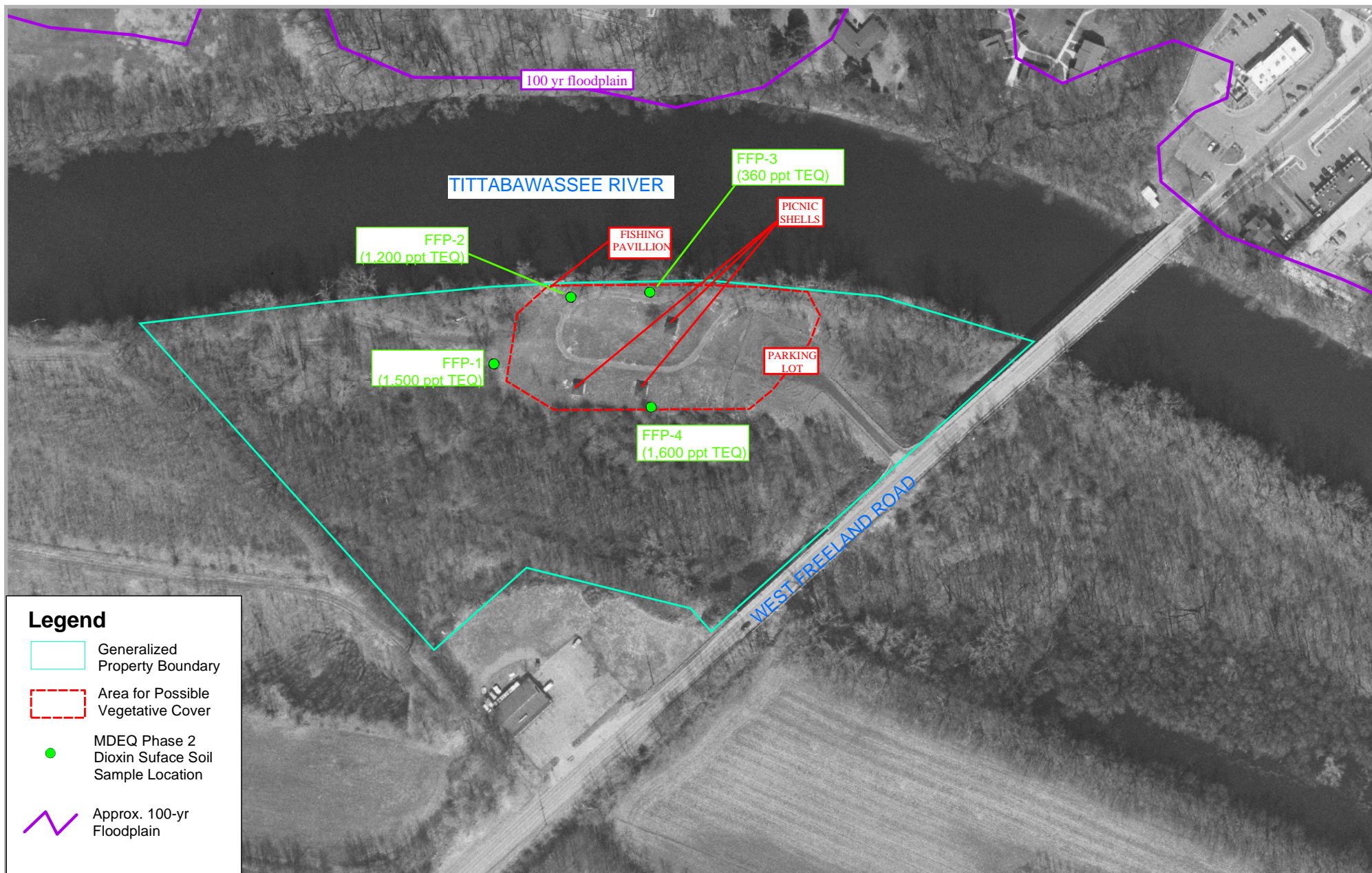


Figure 2
Features at Freeland Festival Park
 Interim Response Activities Workplan: Freeland Festival Park
 Dow Midland Offsite Corrective Action Program

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Figure 3

Conceptual Drawing of Stonewall

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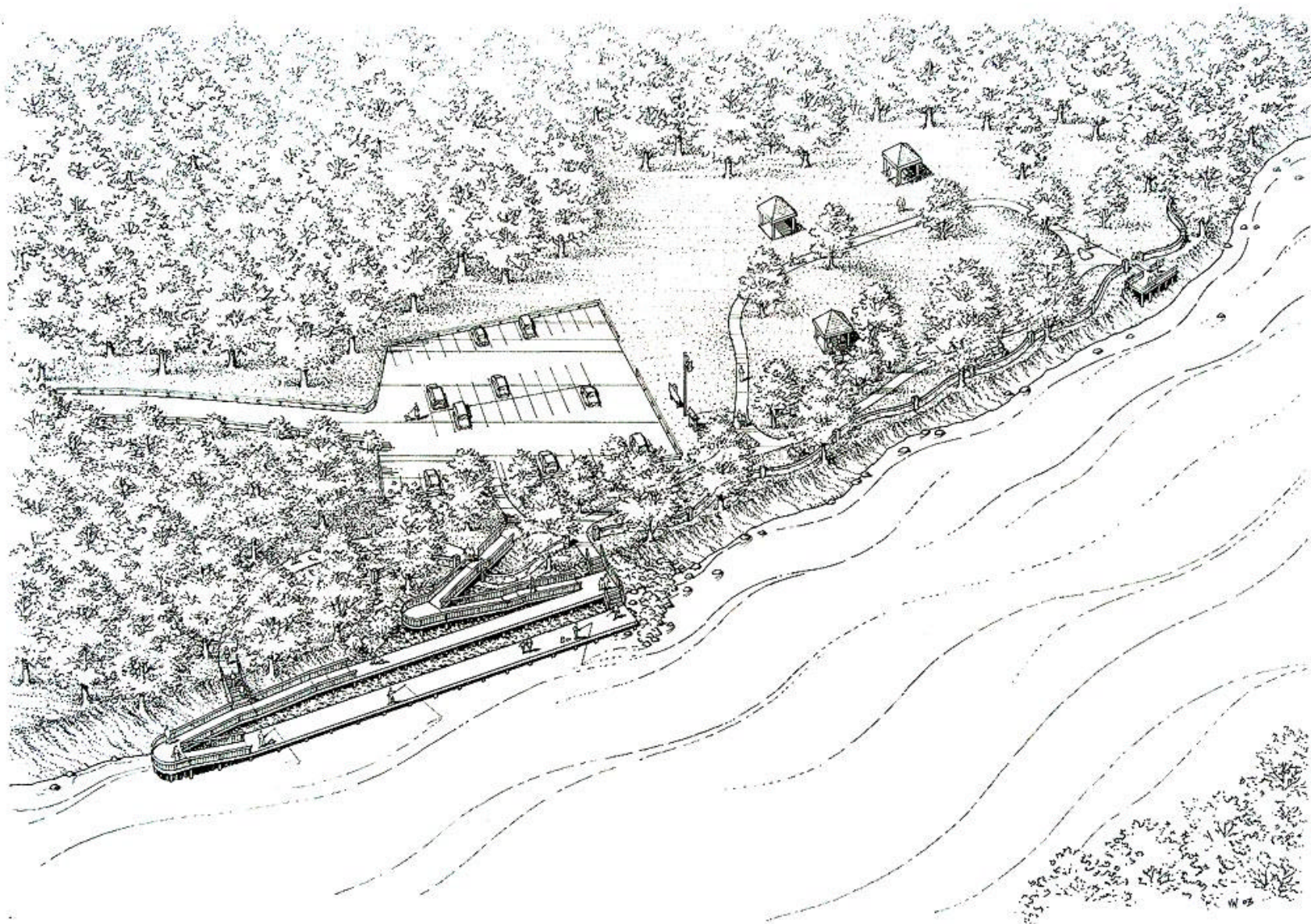


Figure 4
Conceptual Drawing of Decking, Walkway & Stonewall
Interim Response Activities Work Plan: Freeland Festival Park
Dow Midland Offsite Corrective Action Program